Chicago. World's Columbian Expos. 1893

Classification - Electricity.

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EXPOSITION OPENS MAY 1, 1893. EXPOSITION CLOSES OCT. 30, 1893

BUILDING TO BE COMPLETED AND DEDICATED OCT. 12, 1892.

EXHIBITS RECEIVED FOR INSTALLATION NOV. 1, 1892.

WORLD'S COLUMBIAN EXPOSITION

CHICAGO, U. S. A.

1893.

CLASSIFICATION AND RULES

J

DEPARTMENT OF

ELECTRICITY

With other information for intending Exhibitors.

OFFICE: — RAND-MCNALLY BUILDING,

160-174 ADAMS STREET, CHICAGO

GEO. R. DAVIS,
Director-General.

J. P. BARRETT,
Chief of Department.

DEPT. OF ELECTRICITY.

World's Columbian Exposition.

SPECIAL NOTICE TO EXHIBITORS.

We are pleased to mail you herewith pamphlet containing Classification, Rules and Regulations, and other information concerning the intentions of this Department.

While a few important questions have been necessarily omitted for the time being, and others only briefly touched upon, it is hoped that the pamphlet contains enough information to allow those who contemplate making an exhibit to proceed intelligently.

The Chief of the Department will be glad to furnish special information to those interested, and invites correspondence.

In order that Exhibitors in this Department may begin their preparations, I have decided to immediately begin the assignment plication will please do so at once. Immediate action on your part is the more necessary because of the fact that the demand for space is many times in excess of the amount available.

Foreigners will transact all business, and apply for space to the Government Commissions of their respective countries.

J. P. Barrett,

Chief of Department.

ELECTRICAL BUILDING.

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ORGANIZATION.

Pursuant to an Act of Congress approved April 25th, 1890, authorizing the World's Columbian Exposition, a permanent organization has been effected, under which the Exposition is divided into fifteen (15) departments corresponding to the chief divisions of industry and progress. Of these departments, Electricity is one, and is distinguished in the catalogues and classification by the letter "J," all the departments being numbered alphabetically.

SCOPE OF THE DEPARTMENT.

The primary object of the Electrical Department is the demonstration in actual operation, of the commercial and economic applications of electricity. It is desired moreover to make exhaustive tests of electrical apparatus in all possible directions with a view to establish the actual efficiency of the same in comparison with other and older methods of accomplishment.

In addition to these practical features, it is contemplated to present object lessons of interest and instruction, showing the development of the science from its formative or initiatory state to the present time. The accomplishment of this object will take the form of an historical exhibit embodying models, drawings and crude machinery made and used by pioneers in the science. It is the earnest desire of the Department to make a full and connected showing in this direction, and the co-operation of all who are interested in the work of the Department is solicited.

Reverting for a brief space to the practical features of the exhibition, a few of the more pressing applications of electricity may be mentioned, in which directions special facilities will be required, and in which an endeavor will be made to meet the requirement.

Electric Lighting.—The buildings and grounds of the Exposition will be lighted by electricity. It has been estimated that about 8,000 arc lamps of 2,000 candle power, and about 130,000 incandescent lamps of sixteen-candle power will be required. Besides this, from 3,000 to 3,500 horse power will be required for the operation of the machinery of exhibitors. To furnish and transmit this 24,000 horse-power the Exposition Company will construct a plant which, though a complete station in itself, will be composed of a number of smaller complete plants, installed by those who contract to furnish certain parts of the service. These plants will be primarily for the service of the Exposition, but are not for that reason prohibited from becoming competitive exhibits as

well, provided the usual course is taken by their owners, of making the proper application as exhibitors, through the office of the Director-General.

Electric Railways.—An intermural railway of five miles in extent for transporting passengers about the grounds will be arranged for as a part of the service of the Exposition, and though the question has not been definitely settled, it is expected that electric power will be the operating force.

In addition to this road, it is contemplated to make provision for the exhibition of electric motor cars in operation. The necessary space for this purpose has not been located as yet, but exhibitors may feel assured their interests in this behalf are fully appreciated, and will be given proper consideration in ample time to allow of all necessary arrangements.

Mining and Milling Work.—Preparations are being made for the exhibition of motors and other electric machinery, to fully illustrate the possibilities of the science in the direction of mining and milling, the long-distance transmission of power for mining operations, and the various applications of the power at the point of usefulness.

Metal Work.—Reducing, refining, separating, welding, and shaping metals and all kinds of electro-metal work will be features of the exhibition of this department, and all possible facilities will be furnished exhibitors in this field.

Artistic Effects.—Art in electricity is becoming popular, and an endeavor will be made to show the newest and most approved fixtures for lighting, as well as the many systems of stage and auditorium lighting, the lighting of art galleries, etc. Small chambers illustrating varied effects promise to be popular with exhibitors, and all proper aid will be extended by the Department looking to the best possible result, as well to the exhibit generally as to the individual exhibitor.

Insulation Work.—Wiring, underground and overhead systems of construction, interior insulation, conduit construction, etc., promise to be greatly benefited by carefully-installed exhibits, showing development in these directions, and exhibitors will be given opportunity for thorough tests of their apparatus.

It is superfluous to add to this general statement that every possible field of electrical work will be liberally considered, and that all systems of all countries will be placed as favorably as possible to the end that the best results may accrue to the electrical people and the public at large.

THE ELECTRICAL BUILDING.

The edifice now in course of construction, and fast approaching completion, is especially designed to contain the electrical exhibits, and presents as harmonious a whole, considering its intended service, as it is beautiful in architecture. It is seven hundred feet long, three hundred and forty-five feet wide, its length being from north to south. The general plan is a longitudinal nave, one hundred and fifteen feet wide, and one hundred and fourteen feet high, crossed by a transept of the same width and height. Longitudinal galleries will extend along either side of the building one hundred and fifteen feet wide, at a height of thirty feet above the main floor. These galleries will be connected by narrower galleries at either end supported by trusses.

APPLICATIONS FOR SPACE.

Printed blank applications for space are in the hands of the Director-General and will be supplied on request. These blanks contain the rules and regulations, and have blank spaces wherein applicants are to state their requirements in the matters of power, steam, water, space in square feet, etc.

These applications, on being filled out, are to be sent to the Director-General for reference to the proper department.

INSTALLATION OF EXHIBITS.

All exhibits of electrical apparatus will be installed in the Electrical Building, excepting generators, and the adjuncts of a generating plant, which are intended to be shown in operation, and excepting also such apparatus and appliances as may be offered as exhibits for the service of the Exposition. Electric power only will be furnished in the Electrical Building.

No generators designed to be operated by steam power will be installed in the Electrical Building, but will be located

at some other point. Subways will be constructed to connect the Electrical Building with the power station, and through these subways all wiring will be done. The power station will contain the plant under contract to serve the Exposition, and will probably contain the generators of those exhibitors who contemplate exhibiting generating plants of sufficient capacity only to operate the balance of their exhibits in the Electrical Building, and steam power for the running of these generators will be furnished by the Exposition Company at a moderate price, the figures to be fixed hereafter. In the event that it may be found undesirable to combine the actual service machinery with the purely exhibitivie generators, some acceptable site will be found for the latter within reach of power.

Appliances and apparatus such as electric elevators, search lights, etc., intended for exhibition but offered and accepted for the service of the Exposition, may be installed wherever their service is required, without forfeiture of their rights as competitive exhibits, provided their entry as exhibits has been made through the proper department; and provided further that such outside location shall have been approved by the Director-General.

FREIGHT RATES.

An agreement has been reached between the Exposition management and a number of the traffic associations of the United States which provides that all packages containing exhibits will be carried to Chicago for the full schedule rate and returned over same routes free at the close of the Exposition, provided the ownership remains unchanged. It is highly probable that a more favorable arrangement will have been made before the active shipment of exhibits begins, but exhibitors may at least count upon this settlement, or one not less favorable to their interests. A terminal charge of eight cents per hundred pounds will be made to cover the cost of switching at Chicago and of delivering goods to their allotted space. Material reductions in transatlantic and foreign railway rates are assured, and from time to time definite information along these lines will be published.

HANDLING OF HEAVY EXHIBITS.

Ample facilities will be furnished in the Electrical Building for moving any article or piece of machinery weighing not over 30,000 lbs., by means of railroad derricks, the terminal charge of eight cents per hundred pounds covering the cost of moving articles of that size to their allotted space. Any article to be installed in this building weighing more than 30,000 pounds will have to be moved by ordinary means, and will be subject to an extra charge covering the actual additional cost. Tracks will be provided so that freight can be hauled into the building. Any generating machinery or part of same to be installed for operation under load, weighing not over 45,000 pounds, can be carried from the car to its proper location by means of traveling cranes.

STORAGE OF EMPTY CASES.

Arrangements are being made for storing empty cases and packing material, and will probably be as follows: For removing, storing and returning cases and packing material, without insurance, a maximum charge of two cents per cubic foot will be made; for the same service with insurance, two and a half cents per cubic foot will be charged. These rates have not been definitely determined and are subject to amendment.

DUTIES ON IMPORTED EXHIBITS.

A ruling has been made by the treasury department of the United States Government, providing for the free entry of all goods intended solely for exhibition. Goods upon entry will be bonded, and will be relieved of bond upon return, at the close of the Exposition. In case of sale, the duty will be collected. A more complete statement of this ruling has been prepared for foreigners.

OCCUPANCY OF SPACE.

Space must in all cases be applied for and occupied by the actual exhibitor. Exceptions to this rule will not be allowed unless by specific arrangement with the Director-General, or the Chief of the Department. Exhibitors wishing to exhibit

by agent must arrange to that effect before goods are installed. The department will lend all proper aid to exhibitors who wish to employ an agent in this city, but will not be responsible in any way for the conduct of parties whom it may recommend.

BOARD AND LODGING FOR EXHIBITORS' EMPLOYES.

Suitable arrangements can be made by exhibitors for the care of employes in the vicinity of the Exposition grounds at reasonable rates. Exhibitors desiring accommodations for their employes should arrange for such as early as possible.

CONCLUSION.

The Exposition has been most liberal in providing space free of cost, and its officers must therefore, and for obvious reasons, assume arbitrary power in the acceptance of exhibits, and the allotment of space. This power will be invariably applied with a view to secure the best general results, as well as in the direction of aiding the greatest possible number of exhibitors to make the most of the opportunity afforded by so great an exposition.

RULES AND REGULATIONS

WORLD'S COLUMBIAN EXPOSITION.

- RULE 1. Exhibitors will not be charged for space. A limited amount of power will be supplied gratuitously. This amount will be settled definitely at the time space is allotted. Power in excess of that allotted gratuitously will be furnished by the Exposition at a fixed price. Demands for such excess must be made before the allotment of space.
- RULE 2. Any single piece or section of any exhibit of greater weight than 30,000 pounds will not be accepted if machinery is required for its installation.
- RULE 3. Exhibitors must provide, at their own expense, all show-cases, cabinets, shelving, counters, fittings, etc., which they may require, and all counter-shafts, pulleys, belting, etc., for the transmission of power from the main shafts.
- RULE 4. Exhibitors will be confined to such exhibits as are specified in their applications. When the allotment of space is definitely made, exhibitors will be notified of their allotment of space and its location, and will be furnished with a permit to occupy the same, subject to the general rules and regulations adopted for the government of the Exposition and the special rules governing the Department in which their exhibit will be made. Permits for space will not be transferable.
- RULE 5. Special rules will be issued governing each Department and the sale of articles within the buildings or on the grounds, but no articles shall be

sold for removal previous to the close of the Exposition, unless a concession or privilege for the same has been granted by the Committee on Ways and Means. "Privileges" refer to the sale of such goods as are manufactured in order to illustrate a machine or process exhibited. "Concessions" refer to the sale of all goods and operation of attractions from which the securing of revenue is the sole object of the lessees. The removal of exhibits will not be permitted prior to the close of the Exposition.

RULE 6. Decorations, signs, dimensions of cabinets, shelving, counters, etc., and the arrangement of exhibits must conform to the general plan adopted by the Director-General.

RULE 7. Reasonable precautions will be taken for the preservation of exhibits, but the World's Columbian Exposition will not be responsible for any damage to, or for the loss or destruction of an exhibit resulting from any cause.

RULE 8. All packages containing exhibits intended for the several Departments must be addressed to the "Director-General, World's Columbian Exposition, Chicago, Illinois, U. S. A." In addition, the following information must be written on the outside of each package:

- (a) Department in which exhibit is to be installed.
- (b) The State or Territory from which the package comes.
- (c) The name and address of the exhibitor.
- (d) The number of the permit for space.
- (e) Total number of packages sent by the same exhibitor. The serial number must be marked on each package and a list of the contents enclosed in each package. Freight must be prepaid.

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- RULE 9. Favorable terms will be arranged by which exhibitors may insure their own goods. Exhibitors may employ watchmen of their own choice to guard their goods during the hours the Exposition is open to the public. Such watchmen will be subject to the rules and regulations governing the employes of the Exposition; but no exhibitor will be permitted to employ attendants or assistants for service in any building, except upon written consent of the Chief of the Department.
- RULE 10. The expense of transporting, receiving, unpacking and arranging exhibits, as well as their removal at the close of the Exposition, shall be paid by the exhibitor.
- RULE 11. If no authorized person is at hand to take charge of exhibits within a reasonable time after arrival at the Exposition buildings, they will be removed and stored at the cost and risk of whomsoever it may concern.
- RULE 12. The installation of heavy articles requiring foundations should, by special arrangement with the Chief of Construction, begin as soon as the progress of the work on the buildings will permit. The general reception of articles at the Exposition buildings will commence November 1st, 1892, and no article will be admitted after April 10th, 1893. Space not taken possession of April 1st, 1893, will revert to the Director-General for re-assignment.
- RULE 13. If exhibits are intended for competition it must be so stated by the exhibitor, or they will be excluded from examination for award.
- RULE 14. The Chief of each Department will provide cards of uniform size and character, which may be affixed to exhibits, and on which will be stated only the exhibitor's name and address, the name of the object or article exhibited, and its catalogue number.

- RULE 15. Articles that are in any way dangerous or offensive, also patent medicines, nostrums and empirical preparations whose ingredients are concealed, will not be admitted to the Exposition.
- RULE 16. Exhibitors' business cards and brief descriptive circulars, only, may be placed within such exhibitor's space for distribution. The right is reserved by the Director-General to restrict or discontinue this privilege whenever it is carried to excess, or becomes an annoyance to visitors.
- RULE 17. The chief of each Department, with the approval of the Director-General, has the power to order the removal of any article he may consider dangerous, detrimental to, or incompatible with the object or decorum of the Exposition, or the comfort and safety of the public.
- RULE 18. Exhibitors will be held responsible for the cleanliness of their exhibits and the space surrounding the same. All exhibits must be in complete order each day, at least thirty minutes before the hour of opening. No work of this character will be permitted during the hours the building is open to the public. In case of failure on the part of any exhibitor to observe this rule, the Chief of the Department may adopt such means to enforce the same as circumstances may suggest.
- RULE 19. Sketches, Drawings, Photographs or other reproductions of articles exhibited will only be allowed on the joint assent of the exhibitor and the Director-General; but general views of portions of the interiors of the buildings may be made on the approval of the Committee on Ways and Means.

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- RULE 20. Immediately after the close of the Exposition, exhibitors must remove their effects, and complete such removal before January 1st, 1894. Goods then remaining will be removed and disposed of under the direction of the World's Columbian Exposition.
- RULE 21. An official catalogue will be published in English, French, German and Spanish. The sale of catalogues is reserved exclusively by the Exposition Company.
- RULE 22. Each person who becomes an exhibitor thereby agrees to conform strictly to the rules and regulations established for the government of the Exposition.
- RULE 23. Communications concerning applications for space, and negotiations relative thereto, should be addressed to the "Director-General, World's Columbian Exposition, Chicago, Illinois, U. S. A.
- RULE 24. The management reserves the right to construe, amend or add to all rules and regulations whenever it may be deemed necessary for the interest of the Exposition.

(Signed) GEORGE R. DAVIS,
Director-General.

RULES OF THE DEPARTMENT OF ELECTRICITY.

RULE 1. Applicants for space in this Department are requested to furnish the following information as nearly as possible:

First. A drawing to the scale of $\frac{1}{4}$ inch to the foot, showing size of space desired and general distribution of articles to be exhibited, also aisles (if any) among exhibits. Express length, breadth, etc., in feet and inches.

Second. State whether current for motors, lamps, or other devices is required, specifying quantity and potential in volts and amperes.

Third. If power for operating machinery is required, state number of horse-power desired.

The above information is absolutely necessary for the proper allotment of space.

RULE 2. Applicants accepting space must agree to occupy it in accordance with the rules and regulations, and are requested to give earliest possible notice if they decide not to exhibit. Whenever circumstances will admit, exhibitors are requested to install exhibits in glass cases.

RULE 3. No exhibitor can make exhibits in other than his own space without obtaining the written permission to do so from the Chief of the Department.

RULE 4. No exhibitor will be allowed to arrange his exhibit in a way to occasion inconvenience or affect the display of other exhibitors.

RULE 5. The floor of the Electrical Building is designed to sustain a weight of 150 pounds per square foot. Any exhibit requiring an extra support, in the judgment of the Chief of the Department, must be furnished with satisfactory support or foundation at exhibitor's expense.

RULE 6. All platforms, railings, counters, signs, partitions and showcases must be erected at exhibitor's expense and shall not exceed dimensions given below. All designs for the above with location of same in exhibitor's space must be submitted to the Chief of the Department for his written approval before installation is begun.

Show cases shall not be higher than 15 feet above the floor of the main aisles.

Counters shall not be higher than 2 feet 10 inches above the floor of the main aisles.

Railings may be erected but must be of a uniform height of 2 feet 6 inches and subject to the approval of the Chief as in *Rule VIII*.

Platforms will be allowed only in certain parts of the building. All exhibitors wishing platforms to cover their space must build them to a uniform height of 8 inches.

Partitions will be allowed only in certain parts of the building and in all cases must not exceed 15 feet in height and must be approved in writing by the Chief of the Department before their erection is begun.

Signs must be ornamental in character and designs for same must be submitted to the Chief of the Department for his written approval. No signs will be allowed to extend beyond the limits of exhibitor's space, nor will signs of muslin, linen, canvas or paper be accepted. The Chief of the Department reserves the right to remove any signs that may be objectionable.

RULE 7. All exhibits of machinery in motion must be protected by ornamental railings of a uniform height of two feet six inches, and all designs for railings must be submitted to the Chief of the Department for his written approval.

RULE 8. No fire will be allowed in the Electrical Building except by the written permission of the Chief of the Department; oils and inflammable material

will be allowed only in quantities sufficient for one day's use; suitable storage will be provided for the same.

- RULE 9. Exhibitors requiring power in the Electrical Building will have to furnish the necessary counter-shafting, pulleys, hangers, etc., at their own expense. Electric motors only will be allowed for moving machinery in this building and must be furnished at the expense of the exhibitor.

Shafting and motors will be under the care of the exhibitor requiring them, but can be erected only on receipt of a permit from the Chief of the Department. Exhibitors must arrange their exhibits in such a manner as to require a minimum amount of shafting by using motors connected or belted to their machinery direct.

- RULE 10. Exhibitors may employ watchmen to take care of their machinery and exhibits at night, but such watchmen will be subject to the approval of the Chief of the Department.

- RULE 11. Exhibitors will be required to have their space clean and all rubbish swept into the aisles within one hour after the close of the Exposition at night. In cases where this rule is not complied with the work will be done by the Department and charged to the exhibitor. No sweeping will be allowed during the hours when the Exposition is open.

- RULE 12. The distribution of cards, circulars, pamphlets or samples about the building or its vicinity, will not be permitted under any circumstances. Exhibitors can distribute such articles only from their own space, but will not be allowed to solicit their acceptance.

- RULE 13. Exhibitors will be required to attach to each exhibit a printed or type-written description in the English language, of the use and operation of the object exhibited for the information of the public.

RULE 14. Exhibitors or their agents will be furnished by the department with duplicate cards, upon which must be the name and description and the catalogue number of each article entered for exhibition. These will be countersigned on receipt of articles into the Exposition. One of these cards shall be conspicuously attached to the article described, the other to be retained by exhibitor to serve as his order for the article at the close of the Exposition.

Approved: J. P. BARRETT,
Chief Department of Electricity.
GEO. R. DAVIS,
Director-General.

DEPARTMENT J.

ELECTRICITY AND ELECTRICAL APPLIANCES.

GROUP 122.

APPARATUS ILLUSTRATING THE PHENOMENA AND LAWS OF
ELECTRICITY AND MAGNETISM.

- Class 757. Statical electricity.
- Class 758. Thermo electricity; thermo-electric batteries.
- Class 759. Magnets, temporary and permanent.
- Class 760. Induction coils, converters, etc.

GROUP 123.

APPARATUS FOR ELECTRICAL MEASUREMENTS.

- Class 761. Standard resistance coils.
- Class 762. Standard condensers.
- Class 763. Standard batteries.
- Class 764. Instruments of precision; voltmeters, ammeters, wattmeters, etc.

GROUP 124.

ELECTRIC BATTERIES, PRIMARY AND SECONDARY.

GROUP 125.

MACHINES AND APPLIANCES FOR PRODUCING ELECTRICAL CURRENTS BY MECHANICAL POWER—DYNAMICAL ELECTRICITY.

- Class 765. Dynamos of direct current, constant electro motive force; varying quantity.
- Class 766. Dynamos of direct current, constant quantity and varying E. M. F.

- Class 767. Dynamos of alternating current, constant E. M. F., and varying quantity.
- Class 768. Dynamos of alternating current, constant quantity and varying E. M. F.

GROUP 126.

TRANSMISSION AND REGULATION OF THE ELECTRICAL CURRENT.

- Class 769. Cables, wires, and insulation; rheostats, switches, indicators, registering meters; ammeters, voltmeters.
- Class 770. Safety and protective appliances: lightning rods, lightning arresters, insulators, fusible cut-outs, safety switches, etc.
- Class 771. Conduits, interior and underground.

GROUP 127.

ELECTRIC MOTORS.

- Class 772. Direct constant current.
- Class 773. Direct constant E. M. F.
- Class 774. Alternating current.

GROUP 128.

APPLICATION OF ELECTRIC MOTORS.

- Class 775. Street, underground, mining and other railways.
- Class 776. Elevators, pumps, printing presses, and general machinery.
- Class 777. Toys, novelties, and domestic appliances.

GROUP 129.

LIGHTING BY ELECTRICITY.

- Class 778. The arc systems, their lamps, fixtures, and appliances.
- Class 779. The incandescent systems, their lamps, fixtures and appliances.

GROUP 130.**HEATING BY ELECTRICITY.**

- Class 780. For warming and heating apartments.
- Class 781. For heating flat irons, soldering irons, and other objects used in industrial operations.
- Class 782. Maintenance of constant high temperature in ovens.
- Class 783. Electric heating furnaces.

GROUP 131.**ELECTRO-METALLURGY AND ELECTRO-CHEMISTRY.**

- Class 784. Electrotyping.
- Class 785. Electro-plating, gilding and nickeling.
- Class 786. Electro-deposition of iron and other metals.
- Class 787. Electrolytic separation of metals from their ores or alloys.

GROUP 132.**ELECTRIC FORGING, WELDING, STAMPING, TEMPERING, BRAZING, ETC.**

- Class 788. Apparatus for, and methods of forging, welding or joining iron, steel and other metals.
- Class 789. Brazing, stamping, tempering, etc.

GROUP 133.**ELECTRIC TELEGRAPH AND ELECTRIC SIGNALS.**

- Class 790. Various systems of transmitting and receiving.
- Class 791. Chronographs.
- Class 792. Annunciators.
- Class 793. Thermostats.
- Class 794. Fire alarm apparatus.
- Class 795. Police telegraph and burglar alarm apparatus.
- Class 796. Railroad signal apparatus.

GROUP 134.

THE TELEPHONE AND ITS APPLIANCES. PHONOGRAPHS.

- Class 797. Cables ; construction and underground work.
- Class 798. Special protective devices.
- Class 799. Switch boards.
- Class 800. Transmitting apparatus.
- Class 801. Receiving apparatus.
- Class 802. Signalling apparatus.
- Class 803. Long distance systems.
- Class 804. Various systems of operation.
- Class 805. Subscriber's apparatus : Numbers, code, registers, etc.
- Class 806. Phonographs.—Receiving and recording apparatus.
- Class 807. Apparatus for the reproduction of recorded sounds and articulate speech.

GROUP 135.

ELECTRICITY IN SURGERY, DENTISTRY AND THERAPEUTICS.

- Class 808. Caution apparatus.
- Class 809. Apparatus for the application of the electrical current as a remedial agent — surgical and dental.
- Class 810. Apparatus for diagnosis.
- Class 811. Apparatus for the destruction of life.

GROUP 136.APPLICATION OF ELECTRICITY IN VARIOUS WAYS NOT HEREIN-
BEFORE SPECIFIED.

- Class 812.—Ignition of explosives; gas lighting, etc.
- Class 813. Control of heating apparatus by electricity, as applied to steam and hot air pipes and registers.
- Class 814. Electric pens.
- Class 815. Application in photography.

GROUP 137.

HISTORY AND STATISTICS OF ELECTRICAL INVENTION.

Class 816. Objects illustrating the development of the knowledge of electricity and of the application of electricity in the arts.

Class 817. Collections of books and publications upon electricity and its applications.

GROUP 138.

PROGRESS AND DEVELOPMENT IN ELECTRICAL SCIENCE AND CONSTRUCTION, AS ILLUSTRATED BY MODELS AND DRAWINGS OF VARIOUS COUNTRIES.

Class 818. United States Patent Office and other exhibits of electrical models and drawings.

Class 819. Foreign exhibits of electrical models and drawings

WORLD'S COLUMBIAN EXPOSITION—BIRD'S-EYE VIEW—LOOKING EAST. CHICAGO, ILL., U. S. A., 1893.

Art.	Illinois.	Fisheries.	U. S. Government.	Naval.	Manufactures and Liberal Arts.	Casino and Pier.	Agriculture.	Forestry.	Dairy.
Woman's.	Horticulture.	Transportation.	Mining.	Administration.	Machinery.	Live Stock.			
					R. R. Approaches.				

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